

NEW SPECIES OF SERICOSTOMATOID TRICHOPTERA

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The four species described in this paper come from mountainous regions of the continent, two from the East and two from the West, and each is known from only one locality or from localities within a small area. All four species share also the circumstance that each is remarkably well set off from its closest known relative. The discovery of these and others like them suggests strongly that there exist in the nearctic fauna many unknown species of caddisflies, either extremely local in distribution or making their adult appearance over only a short emergence period.

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LEPIDOSTOMATIDAE

***Lepidostoma veroda*, new species**

This species is a member of the Unicolor Group, and in my 1946 key will resolve through couplet 34 to *delongi* Ross, known only from Mexico. These two species, *veroda* and *delongi*, may be separated by the following couplet.

- Ventral aspect of clasper having tip of outer apical lobe ending in a sharp point that lies laterad of inner apical lobe; lateral aspect of tenth tergite without a blunt projection on posterior margin, but with a large rounded lobe on ventral margin (Ross, 1946, p. 277, fig. 12) *delongi*
- Ventral aspect of clasper having tip of outer apical lobe finger-like and curved slightly mesad, overlaying tip of inner apical lobe which is of the same shape; lateral aspect of tenth tergite with a blunt triangular projection on posterior margin, but with nearly straight ventral margin, fig. 1. *veroda*

Male. Length from front of head to tip of wings, 8 mm. Color of head and body dark brown, antennae and legs yellow, wings tawny and light. Antenna highly modified; scape large and swollen, bilaterally compressed, laterally smooth and forming an expanse larger than lateral area of the head, slightly longer than deep, and mesally excavated to form an earlike organ bearing scattered black hairs; pedicel moderately robust; flagellum narrow and whiplike, normal in shape. Maxillary palpus forming a large, elongate, oval mass, the apical portion set off to form a thin membranous hood, the whole forming a pocket filled with abundant long scales. Wings normal for genus; front wing without reflexed anterior margin or scale pockets; hind wing also lacking special structures but having a row of black scales along base of Cu_1 and the central portion of M and base of M_{1+2} and M_3 . Legs normal

and simple, without specialized structures. Abdomen having eighth tergite with lateral warts each bearing only a few hairs.

Genitalia as in fig. 1. Ninth segment narrow, but almost evenly annular. Tenth tergite composed of two lobes, each a more or less vertical plate as high as long, nearly straight on both dorsal and ventral margins, and having a large, flat projection on the posterior margin; this projection is pointed at apex and situated about midway between dorsum and venter of the lateral lobe. Each lobe has a few scattered setae along the posterior and dorsal margins, and near the dorsal margin a cluster of setae in which each is on a slight elevation. Clasper short; basal process thick and short, projecting only slightly dorsad of dorsal process and bearing a few short hairs; dorsal process longer and more slender, pointed at tip and bearing toward apex a row of long setae, the process separated from body of clasper by a wide slit; apico-mesal process (*a*) short and finger-like, from mesal view, fig. 1A, appearing to overlay the apex of the clasper except for a narrow, exposed mesal portion; clasper body itself wide at base, tapered first near middle and then abruptly just before apex to form a short, narrow tip. Aedeagus short, curved, and tubular, lacking dorsal blades.

Holotype. Male; Hood River Meadows, Mt. Hood, Oregon, July 17, 1947, Kenneth M. Fender.

***Lepidostoma hoodi*, new species**

As in the case of the preceding species, *hoodi* will key to *delongi* in my 1946 treatment of the family. From both *delongi* and *cascadense* (Milne), *hoodi* is readily separated by its long tenth tergite and clasper; in this respect it resembles *jewetti* Ross, but from this species *hoodi* differs in the tapering apex of the clasper, lack of a dorsal tooth on the lobes of the tenth tergite, and many other differences.

Male. Length from front of head to tip of wings 9 mm. Color of head and body medium brown; the scape and pedicel of the antennae dark brown, the flagellum light and tawny; legs tawny; wings also tawny except for a longitudinal pocket of dark hair. Antennal scape highly modified, enlarged and bilaterally flattened into a shoelike shape, with a "leg end" attached to the head, the "heel" dorso-mesal in position, and the "toe" apical, large and blunt; the inner side of this plate is concave and bears a dense brush of long black hair along the entire dorso-mesal margin. Maxillary palpus 1-segmented, elliptic, forming a sheath for a dense brush of long scales. Front wing quite wide, the anterior portion not at all reflexed, but the posterior portion folded fan-like twice *on top* of the wing, the anterior edge of the fold running close to Rs; the first fold forms a long pocket filled with long, dark, simple hair. Hind wing normal for genus. Lateral warts of eighth abdominal tergite each bearing only a few setae.

Genitalia as in fig. 2. Ninth segment short and annular, forming a fairly even, sclerotized ring. Tenth tergite long, almost as long as

clasper, and without conspicuous ornamentation. From lateral view it is oblique at apex and is curved down slightly to form a narrow, depressed tip; from dorsal view, fig. 2A, it is divided two-thirds the distance down the meson to form a pair of parallelsided lobes diverging slightly at extreme tip. The tergite is covered with small but conspicuous setae scattered over all portions except the extreme base. Clasper long, the body fairly narrow, markedly narrowed two-thirds distance from base to form a tapering, sharp, upturned tip; basal process long and finger-like, over half of it extending above the dorsal margin of the clasper body; dorsal process (*d*) fairly narrow, pointed at apex, appressed very closely to margin of clasper body, and bearing at its tip a short series of long setae; apico-mesal process (*a*) also finger-like and very narrow, from lateral view extending into the curve made by the upturned apex of the clasper body. Aedeagus having a short vasiform base which narrows into a slender, long, curved tube and a dorsal pair of flat sclerotized blades, nearly as long as the tube, curved to fit against it and usually held closely appressed to the tube.

Holotype. Male; Government Camp, 4000' elev., on south slope of Mt. Hood, Oregon, July 23, 1946, H. H. Ross.

Paratype. Hood River Meadows, Mt. Hood, Oregon, July 17, 1947, Kenneth M. Fender.

BRACHYCENTRIDAE

Brachycentrus spinae, new species

In the keys to species of *Brachycentrus* by Milne (1936) and Ross (1944) this species will key to *numerosus* Say, and on the basis of the macrochaetae on the tenth tergite, the ovate and separated cerci, and the similar lateral aspect of the claspers, the two are indeed closely related. This new species differs from *numerosus* in several features, as follows:

- Each lobe of tenth tergite having five to ten macrochaetae at apex, fig. 3; apical portion of clasper having a broad mesal shoulder formed by a ventral flange, the dorsal part of the clasper above the flange narrow, the whole forming a scooplike apex like a table crumb tray, fig. 3A and 3B *spinae*
- Each lobe of tenth tergite having only one or two macrochaetae at apex; apical portion of clasper cut away slightly on venter to form a small ventral shoulder which does not project mesad but lies within the narrow ventral outline of the curved clasper (Ross, 1944, p. 264, fig. 899) *numerosus*

Male. Length from front of head to tip of wings 11.5 mm. Color of head and body dark brown, almost black; antennae and base of legs dark brown; palpi, tibiae, and tarsi reddish brown, wings the same ground color and having tawny pubescence. Maxillary palpi short, 3-segmented, and curved to fit against the face. Labial palpi longer, swollen and sausage-like. Seventh sternite of abdomen having a small, arcuate, mesal projection.

Genitalia in lateral view extremely similar to those of *numerosus*, as illustrated by Ross (1944, fig. 899). Ninth tergite narrowed dorsad and widest near middle. Cerci large and separated to base, each cercus ovate and rounded at tip. Tenth tergite divided into a pair of long lateral lobes appressed near apex but separated basad by a membranous area, fig. 3; each lobe bears five to ten lateral macrochaetae near apex, the number of these and their relative size varying considerably; mesad of the large macrochaetae the dorsal surface of the lobe bears scattered short setae. Claspers curved, each having a truncate basal portion appressed to ninth segment, and a curved apical portion which curves posteriad and mesad and is modified as shown in figs. 3A and 3B. The ventral aspect of the apical portion, fig. 3A, has a wide, mesal, shoulder-like shelf near middle, which extends along the side of the clasper to the sharp tip; the dorsal edge of the clasper, fig. 3B, is not so produced, so that the whole apex forms a scoop very similar to a table crumber.

Holotype. Male; Camp Creek, Greene Co., Tennessee, April 24, 1947, in light trap, Mike Wright.

Paratypes. Same data as holotype, 65 ♂; same data but April 22, 55 ♂.

Dr. Wright's records indicate that this species was on the wing for only a week or so at the most. This is entirely in accord with records of other species of the genus from other parts of North America. Apparently there occurs a definite mass emergence of the adults of a species in any one locality, and the adults are fairly short lived. While apparently not so sudden and abrupt as some mayfly flights, this group emergence of *Brachycentrus* caddisflies is nevertheless in the same general category.

SERICOSTOMATIDAE

Sericostoma tetron, new species

Among material collected in Georgia by Professor Fattig were two males of *Sericostoma* closely related to *griseum* but differing markedly in the mesal rods associated with the claspers, as outlined in the key following the description below, and in other characters of the genitalia. This new species *tetron* brings to five the number of known eastern species of the genus.

Male. Length from front of head to tip of wings, 12 mm. Color of head and body medium brown, palpi and legs slightly lighter. Antenna having scape large and trapezoidal, the scapes of the two antennae appressed on meson and together making a large knot that covers about the anterior half of the dorsum between the eyes; pedicel very small, flagellum long, slender, and normal for genus. Wings, legs, and mesonotum typical for genus.

Genitalia as in fig. 4. Ninth segment reduced dorsad to a narrow indefinite area at the base of the tenth tergite, but forming a large area below this; the anterior margin of the segment forms nearly a right angle laterad. Tenth tergite elongate and forming lateral plate-like halves, each narrowing towards apex and just before this narrowed suddenly to form a short truncate tip, which has a sharp ventral point. Cercus finger-like, narrow, and constricted basally, bearing scattered short setae on the apical half. Claspers united at base, the mesal part of the uniting piece produced into a curious structure, the mesofurca, divided in this species into two halves and each of these subdivided into two long processes; of these the outer one is extremely long and slender, at apex curved mesad, and the inner one is little more than half the length of the outer, but thicker and roughened on the apical portion. The main body of each clasper is elongate and narrow when seen from the venter; its lateral aspect is curved, widest near middle, and tapered to a narrow sharp point at apex. Aedeagus long and irregularly cylindrical, slightly bowed, and with a small area of membrane at tip.

Holotype. Male; Wolf Creek, 3 miles north of Neel Gap, Georgia, May 30, 1945, P. W. Fattig.

Paratype. Tennessee; English Creek at Carson's Spring, near Newport, Cocke Co., June 3-8, 1946, at light, Mike Wright, 1 ♂.

The members of this entire genus are characterized by the curious structure that arises from the fused bases of the claspers. I am proposing that this structure be called the *mesofurca*, in allusion to its forked nature. This structure offers a convenient set of characters to divide the genus into groups and also to separate the species of the group to which *tetron* belongs. This is embodied in the following key.

PARTIAL KEY TO NEARCTIC SERICOSTOMA MALES

1. Mesofurca flaplike, only slightly cleft on meson to form short lobes, each tipped with long, stout setae. Species known only from southern portion of western montane region. Contains *griseolum* (McLachlan), *nigriculum* (McLachlan), *assimilis* (Banks), *arizonicum* (Banks), and probably *hesperum* (Banks) Griseolum Group
- Mesofurca cleft nearly to base to form long, lateral rods without long setae and sometimes each divided again, fig. 4. Species known only from the Allegheny Mountain region Crassicornis Group 2
2. Each lateral rod of mesofurca branched, fig. 4 3
- Each lateral rod of mesofurca simple, without branching 4
3. Each lateral rod of mesofurca with a curved, short, sharp, dorsal branch near middle *griseum* (Banks)

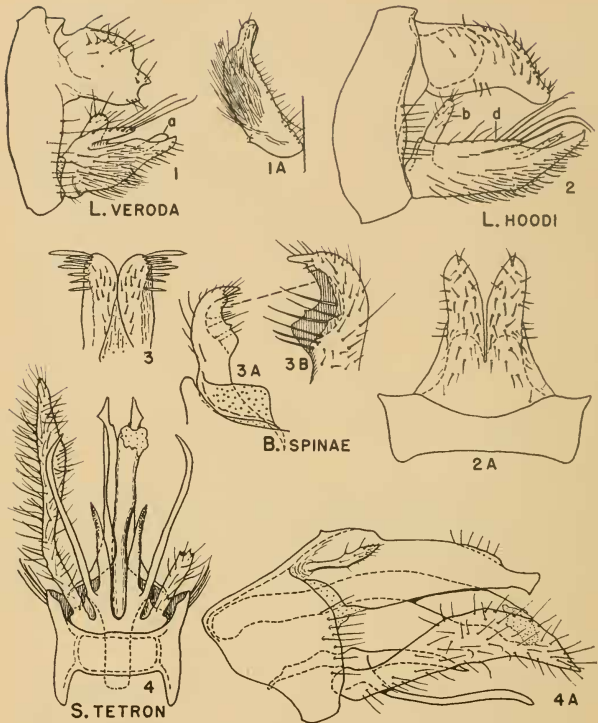


FIGURE 1.—*Lepidostoma veroda*, male genitalia, lateral aspect; 1A, clasper, ventral aspect. FIGURE 2.—*Lepidostoma hoodi*, male genitalia, lateral aspect; 2A, ninth and tenth tergites, dorsal aspect. FIGURE 3.—*Brachycentrus spinae*, apex of tenth tergite, dorsal aspect; 3A clasper, ventral aspect; 3B, apical portion of same clasper, dorsal aspect, and slightly more enlarged than 3A. FIGURE 4.—*Sericostoma tetron*, male genitalia, ventral aspect; 4A, same, lateral aspect.

a, *b*, *d*.—processes of clasper; *a*, apico-mesal process; *b*, basal processes; *d*, dorsal process.

Each rod cleft to near base, with a shorter, stout, mesodorsal branch and a longer, slender, latero-ventral branch, fig. 4.....

.....*tetron* n. sp.

4. Each lateral rod of mesofurea much longer than claspers, both very slender (Betten and Mosely 1940, p. 179, fig. 90).....

.....*crassicornis* (Walker)

Each rod shorter than claspers, often wide and flat from ventral view

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5. Lateral rods of mesofurea widely separated at base, and of even thickness throughout; clasper having a large mesal process (Ross, 1938, p. 170, fig. 112)

pele (Ross)

Lateral rods close together at base, narrowing and diverging at apex (Betten 1934, p. 60, figs. 4-8, listed as *griseum*).....

.....*distinctum* (Ulmer)

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THE GENUS *CLIGENES* IN THE UNITED STATES

(HEMIPTERA, LYGAEIDAE)

By H. G. BARBER, *Roselle, New Jersey*

Genus *Cligenes* Distant. (Monotype *distinctus* Distant).

1893 Distant, Biol. Centr.-Amer., Rhyneh. 1:405.

1895 Bergroth, Rev. d'Ent., 142 (Transferred *Salacia picturata* and *delineata* Distant, both from Panama, to *Cligenes*).

Cligenes modesta, new species

1918 *Cligenes delineata* Barber (not Distant), Jour. N. Y. Ent. Soc., XXVI:59.

Pterygodimorphic. Color of head and pronotum dark castaneous, somewhat shining; scutellum dull, fuscous, with pale apex; corium ochraceous, with a small costal spot near middle point, and the apex,